



Moving Forward 2.0
Innovation Workshop

Final Report
Prepared for IHADA
December 2016

Executive Summary

The Project and Collaborative Workshop:

Building on the success of Moving Forward “1.0,” the Indiana Housing and Community Development Authority (IHCDA) renewed the Moving Forward initiative for a second year. Referred to as Moving Forward 2.0, this year’s exciting development projects will integrate power generation, housing development, energy storage, and clean transportation in a total cost of ownership (TCO) model for:

- improving quality of life for tenants,
- increasing energy efficiency, and
- generational poverty alleviation

IHCDA renewed its partnership with Energy Systems Network (ESN) to execute an Innovation Workshop on November 9-10, 2016. Global thought leaders, subject matter experts, and the selected community action agencies (CAA) came together to collaborate in defining goals, processes, solution sets, and established measurements of success for creating world-class living ecosystems.

Innovation Workshop and Results

Participants in the workshop spent two highly active days working in a collaborative Innovation Workshop process to establish stretch goals, identify breakthrough opportunities, address challenges, and develop process and product solutions. On Day One the participants were placed into five strategic breakout subgroups:

1. Energy Efficiency & Supply
2. Built Environment
3. Transportation
4. Policy, Finance, and Poverty Alleviation
5. Systems Integration

On Day Two participants were dispersed into two “Visioneering” teams to create high-level plans that would address and meet the stretch goals for each CAA’s site. This Executive Summary provides an overview of the key workshop results so the IHCDA and CAA teams can review the summary results of the Moving Forward 2.0 Innovation Workshop. A full report of all Innovation Workshop results is also available.



Mission Statement
Moving Forward will enhance the “Quality of Life” for Hoosiers through innovative and integrated housing and transportation solutions to increase affordability, improve environmental quality, and create greater community within the site, region, state, and beyond.

Summary of Day One Activities

Overview of Main Activities from Day One:

The first day of the Moving Forward 2.0 Innovation Workshop centered around four main activities:

1. Inspiration and Breaking Boundaries
2. Establishing Minimum and Stretch Goals
3. Designing Solutions and Pathways to Move from Minimum Goals to Stretch Goals
4. Selecting Top Three Goals for Each Group

Inspiration and Breaking Boundaries

CAAs and SMEs were invited to tour the beautiful and inspiring LEED platinum-certified Nature Conservancy in Indianapolis before a presentation on breaking boundaries and thinking creatively. The presentation included a video on the topic of biomimicry (looking to biology for design), integrated and efficient sustainable systems, and the “Pathway to Sustainability” model developed by ESN. Inspiring projects included the BlueIndy car sharing project to illustrate how a total cost of ownership analysis can lead to breakthrough sustainability and efficiency gains. The workshop participants then participated in a “Headlines of 2025 Activity” to think “outside the box” of what the future and successful outcomes of Moving Forward 2.0 could be.

Goal Setting

After the warmup activities of the morning, the next two breakout group sessions defined minimum and stretch goals.

Stretch Goal Process

The final breakout session focused on defining the processes to get from minimum goals to stretch goals.

Voting on Top Three

At the end of Day One, all workshop participants voted on which three goals and processes which should be prioritized for further definition and refinement.



Setting Minimum and Stretch Goals

Project Intention

The intent of the Moving Forward 2.0 project and process was to push the current boundaries in integrated housing with energy efficiency and transportation to address quality of life, education, employment, and move toward sustainable poverty alleviation. To achieve this, workshop participants established two levels of goals for each project area.

Minimum Goals

These goals set the baseline requirements for the final projects to meet. While they are “minimums” for these projects, these goals are intended to far exceed current standards for energy efficiency, environmental quality, materials, water, transportation, systems, poverty alleviation, etc.

Stretch Goals

Participants also set stretch or “out of the box” goals beyond the minimum goals. The stretch goals became the actual targets that all participant proposals aimed to define and accomplish. The strategies and high-level plans developed on Day Two of the workshop focused on achieving the stretch goals for the specific projects.

Looking Beyond Certification Programs

The goals set at the Workshop are not meant to conform to existing standards and certification programs, but certification programs can provide useful insights and potential baseline targets in different areas.



Summary of Minimum Goals

Energy Efficiency and Supply	Policy, Finance, and Poverty Alleviation
Net zero, efficient development energy usage	Access to integrated suite of PA services and assistance
Tenant awareness and education of energy usage	IDA accounts for upward mobility
Solar PV with energy storage for emergency backup	Partners: lenders, utilities, and corporations
Built Environment	Systems Integration
HERS > 45, efficient building design	Community center and gardens to facilitate social interactions
EPA Water sense cert. and rainwater harvesting	Easy access to employment, education, childcare, healthcare
On-site ag. – 10% daily nutritional requirement	Efficient and affordable energy, water, and transit
Transportation	
Use phone “app” for integrated transit solutions	
Integrated multimodal options (50% auto reduction)	
Capture full cost of auto (fossil fuel vs. shared EVs)	



Summary of Stretch Goals

Energy Efficiency and Supply	Policy, Finance, and Poverty Alleviation
Job creation with financial return for tenants	CAA one-stop-shop w/ 2 nd generation approach
Integrate emerging building energy technology	Mixed income / mixed use development and community
Ongoing energy modeling, tracking, and analysis	Co-working, maker space (OSBE/OCRA)
Built Environment	Systems Integration
Net Positive (DOE rule, NZEB/LBC cert.)	Integrated education with 100% graduation (high school, diploma, vocational degrees, college degrees) – i.e., Sustainable Path to Independence
Onsite community agriculture (LBC)	Multi-generation poverty alleviation – alumni re-invest
Beauty: LBC imperative	Closed systems in agriculture to farming, to waste, to value, to \$. Teach energy, biology, health science, business
Transportation	
One app for multi-modal options	
Eliminate “siloe” funding projects and pursue integrated transportation solutions	
Create new mobility structures with pedestrian walkways as emphasis (e.g., live/work/play design)	

Summary of Day Two Activities

Inspiration & Breaking Boundaries – Day Two

The morning of Day Two included a presentation by Mr. Carl Worthington and Mr. Stephen Brooks of Oz Architects regarding “Konza Techno City” in Kenya – a “greenfield” city for over 100,000 people currently entering its Phase 1 plans of construction. The video presentation and lecture challenged workshop participants to consider “macro-” integrated systems in living, transportation, energy, and how community development can create dynamic community solutions.

Stretch Goal Process Definition

The breakout groups were challenged to take the processes they established at the end of Day One and give detailed definition to the means of achieving the stretch goals. This included, but was not limited, to:

- “Who / How” – what partners, technology, policy, etc. are needed to achieve the stretch goal?
- “TCO” – Defining total cost of ownership (TCO) includes all capital expenses as well as ongoing operating expenses over the life of the system
- “ROI” – What is the return-on-investment (ROI) on the stretch goal? What funding streams can be identified to make this stretch goal a reality?

“Visioneering” Teams

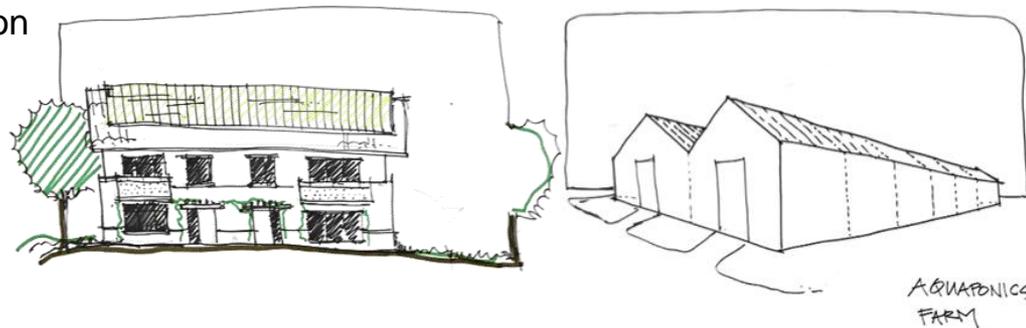
The majority of Day Two was spent developing high-level plans for each CAA:

Area IV - Area IV Agency on Aging and Community Action Programs (Lafayette, Ind. and five satellite offices in neighboring counties)

CAGI – Community Action of Greater Indianapolis

Participants were separated into two teams and the remaining SMEs were equally divided among the teams. Each team was given an actual and potential property in their service territory and challenged to create a high-level development plan that would achieve the established stretch goals.

After a half day of time to work on the high-level plans, each CAA presented their plans to a guest panel of state leaders and potential investors. The following slides contain a summary overview of the proposals set forth by each team.



CAGI – “Eastside Splendor”

Location: Indianapolis, Ind. at the Northeast corner of Michigan Street and Jefferson Avenue

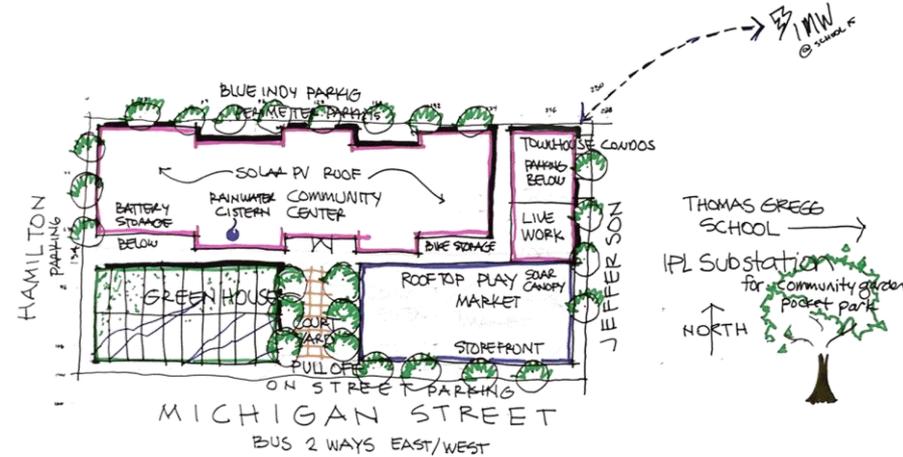
Renewable Energy System: Grid-independent design with 1 MW solar and 2 MWh battery (minimum 2 day resiliency) – “islandable” development area

Development Characteristics:

- 35 units (1-4 bdr) – 36,625 SF
- Common space with integrated retail market, greenhouse, and community room
- Integration with existing external services and infrastructure
- Electric (EV) circulator bus and walking/biking paths provide access to existing services
- Small land parcel(s) – maximize use of space
- Onsite aquaponics farming for food, education and employment
- All-electric and renewable building loads and utility services (solar + batteries)

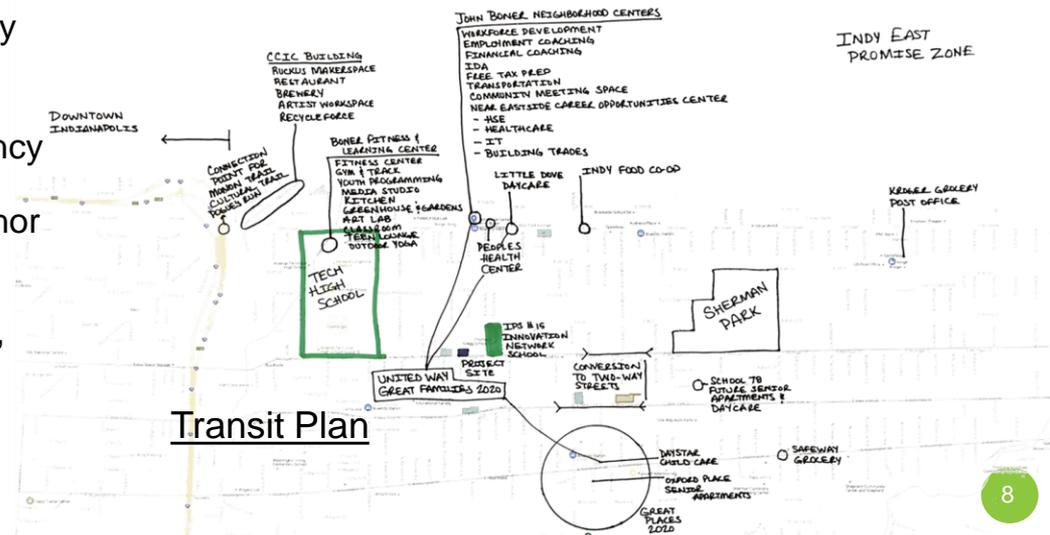
Goals/Objectives:

- Sell energy storage services to MISO grid frequency regulation and develop ancillary services market
- Development is designed to be a community anchor for surrounding neighborhood(s)
- High priority on safety and security
- Network and integrate with existing services (e.g., Boner Center, Farm 360, CCIC building, grocery stores, link to downtown with clean transit center)



Built Environment Plan

EASTSIDE SPLENDOR



Transit Plan

Area IV – “Unity Gardens”

Location: Monticello, Ind.

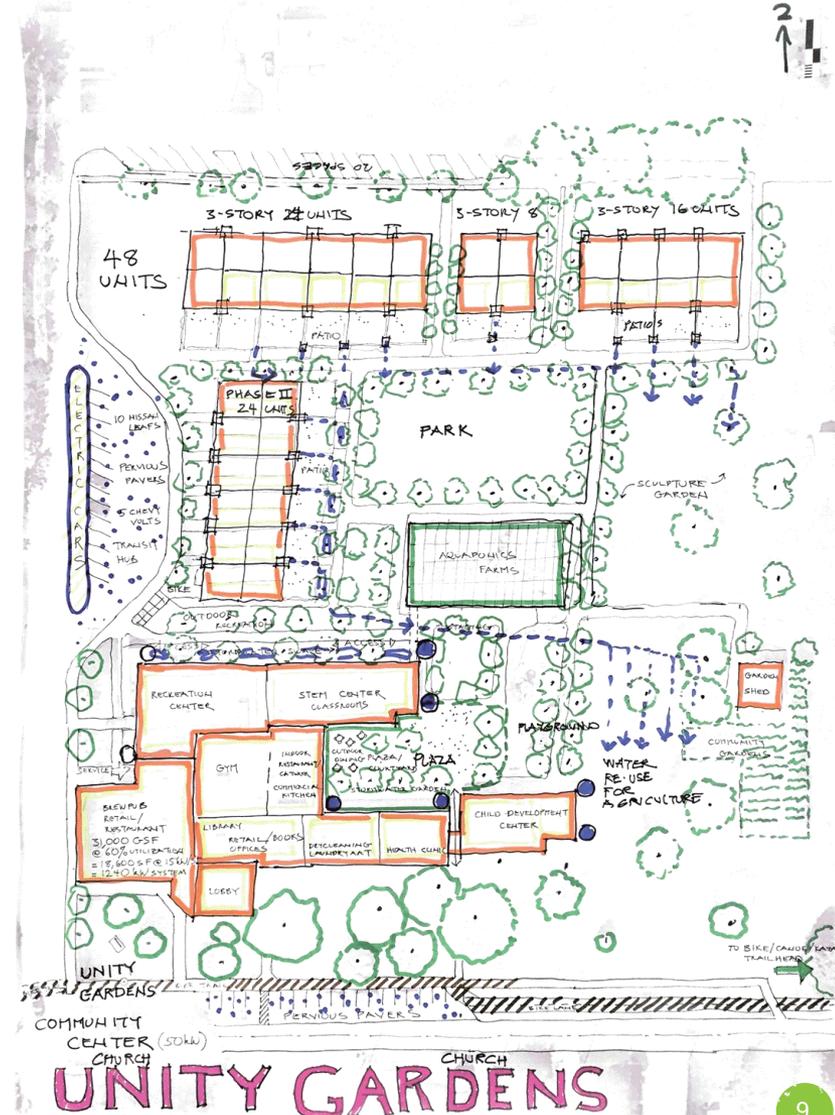
Renewable Energy System: 500 kW solar w/smaller Energy Storage System (ESS) for back-up

Development Characteristics:

- 44-unit building – 44,000 SF
- Utilize existing closed elementary school
- Use 65 kW Capstone Combined Heat and Power (CHP) in community center for aquaponics process and for heating the building
- 15 shared EVs – one charge per day from solar power
- Community center inclusive of recreation, STEM center classrooms, brewpub, retail, dry cleaning services, child development center, and library
- Electric circulator EV bus to Monticello retail and commercial hubs – grocery, shopping, school, hospital
- Pedestrian walkway to beach on Tippecanoe River

Goals/Objectives:

- Building energy use intensity (EUI) of 10 kWh/SF/year
- Net-zero energy development that expands as MISO market develops
- Tenants stay in surrounding community as they are able to purchase homes
- Use battery for backup power, and then as revenue stream as MISO market evolves



Moving Forward 2.0 Project Goals “Checklist”



Minimum Goals	Area IV	CAGI	Stretch Goals	Area IV	CAGI
Energy Efficiency and Supply			Energy Efficiency and Supply		
Net zero, efficient development energy usage			Job creation with financial return for tenants		
Tenant awareness and education of energy usage			Integrate emerging building energy technology		
Solar PV with energy storage for emergency backup			Ongoing energy modeling, tracking, and analysis		
Built Environment			Built Environment		
HERS > 45, efficient building design			Net Positive (DOE rule, NZEB/LBC cert.)		
EPA Water sense cert. and rainwater harvesting			Onsite community agriculture (LBC)		
On-site ag. – 10% daily nutritional requirement			Beauty: LBC imperative		
Transportation			Transportation		
Use phone “app” for integrated transit solutions			One app for multi-modal options		
Integrated multimodal options (50% auto reduction)			Eliminate “siloe” funding projects and pursue integrated transportation solutions		
Capture full cost of auto (fossil fuel vs. shared EVs)			Create new mobility structures with pedestrian walkways as emphasis (e.g., live/work/play design)		
Policy, Finance, and Poverty Alleviation			Policy, Finance, and Poverty Alleviation		
Access to integrated suite of PA services & assistance			CAA one-stop-shop w/ 2 nd generation approach		
IDA accounts for upward mobility			Mixed income / mixed use development and community		
Partners: lenders, utilities, and corporations			Co-working, maker space (OSBE/OCRA)		
Systems Integration			Systems Integration		
Community center and gardens to facilitate social interactions			Integrated education with 100% graduation (high school, diploma, vocational degrees, college degrees) – i.e., Sustainable Path to Independence		
Easy access to employment, education, childcare, healthcare			Multi-generation poverty alleviation – alumni re-invest		
Efficient and affordable energy, water, and transit			Closed systems in agriculture to farming, to waste, to value, to \$. Teach energy, biology, health science, business		

Moving Forward – Next Steps

Recap and Next Steps

The Moving Forward 2.0 Innovation Workshop created a collaborative environment that challenged every participant to question previously perceived limitations on “how best to integrate high-performance housing and transportation with affordability and purposefully address poverty alleviation.”

The stretch goals pushed the CAAs to think beyond the boundaries of a selected site and identify aspects of sites that would make the goals more achievable. Each CAA developed a plan that met the Stretch Goals for affordability, integrated housing, transportation, environmental quality and efficiency, community development, and – most importantly – improve the quality of life through strategic and sustainable poverty alleviation.

In addition, the Community Action Agencies now have an Outcomes Checklist for their specific Moving Forward projects. As project sites are finalized and detailed designs begin in the coming months, CAAs, developers, and community partners are highly encouraged to integrate the ideas and solutions cultivated in the Moving Forward 2.0 workshop. The Outcomes Checklist has been developed to assist the projects as they advance into reality.

Moving Forward Mission Statement

Moving Forward will enhance the “Quality of Life” for Hoosiers through innovative and integrated housing and transportation solutions to increase affordability, improve environmental quality, and create greater community within the site, region, state, and beyond.



MOVING FORWARD “2.0”